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REMARKS

In the Office Action dated September 21, 2005, claims 1-22 are pending in the above application. Claims 10-22 stand allowed. Claim 1 is an independent claims from which claims 2-9 depend therefrom. Claim 1 is herein amended. Note that claim 1 is not herein amended for patentability reasons, but rather for clarification reasons. Applicant, respectfully, requests that the amendment of claim 1 be entered since it does not raise new issues that would require further search and/or examination. Applicant, in amending claim 1, is merely clarifying what has been recited in claim 1 and has been expressed in the Response of August 26, 2005 for which the Examiner has already responded.

The Office Action states that the corrected drawing sheet referred to in the August 26th Response was not received. A corrected drawing sheet is submitted herewith that includes an amended Figure 1. Figure 1 is amended such that the structure labeled "low-voltage bus" is now labeled "low-voltage bus."

The Office Action states that claims 1 and 6-8 stand rejected under 35 U.S.C. 102(b) as being anticipated by Ruthlein et al. (U.S. Pat. No. 5,698,905).

Claim 1 is herein amended to clarify that the converter circuit maintains a predetermined minimum voltage level on a high-voltage load by switching between a high-voltage bus and a low-voltage bus in response to a load signal to supply power to the high-voltage load from only one of the high-voltage bus and the low-voltage bus. This was expressed in the August 26th Response. The converter circuit supplies power to the high-voltage load from either the high-voltage bus or the low-voltage bus, but not from both simultaneously. The converter circuit determines which bus to supply power from based on the load signal. In response to the load signal, the converter circuit switches between buses.

In paragraph 16, the Office Action states that the Applicant in the August 26th Response stated that the high-voltage bus and the low-voltage bus are used simultaneously. Applicant submits that in the August 26th Response the Applicant argued that the claimed high-voltage bus and the low-voltage bus are

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not used simultaneously. Applicant has also submitted that the intermediate circuit 9 and the low-voltage system of Ruthlein are used simultaneously, which is unlike the claimed invention.

It is admitted in the Office Action that the intermediate circuit 9 and the low-voltage system of Ruthlein are used simultaneously. The Office Action states, "that Ruthlein states that the intermediate circuit/high-voltage bus 9 and the low-voltage bus are utilized simultaneously". In col. 8, lines 17-24, Ruthlein states that the generator 7 is supplied electrical energy from the intermediate circuit 9, which can receive electrical energy from the battery 21. This, as well as the Figures of Ruthlein, support the simultaneous supply of electrical energy from the intermediate circuit 9 and the low-voltage system to the generator 7. In addition, note that only the intermediate circuit 9 is directly coupled to the generator 7. The low-voltage system is coupled to the generator 7 through the intermediate circuit 9. Thus, power cannot be supplied to the generator 7 directly and only from the low-voltage system or battery 21.

The Office Action further states that Ruthlein in col. 7, lines 51-52, states that the motor 1 is supplied high-voltage through up-conversion via the high-voltage bus 9. In col. 7, lines 50-67, Ruthlein states that although it is preferred that the intermediate circuit 9 supply power to the electric motors 1, it may also supply power to the low-voltage system, when a low-voltage system is incorporated into the corresponding vehicle. There is no reference to or suggestion of up-conversion in the stated section. Also, it is suggested that the intermediate circuit 9 supply power to low-voltage electronic devices, such as headlights. It is not suggested that the low-voltage system supply power to the electric motors 1 or any other higher or intermediate level voltage device. Regardless, this is irrelevant since, Ruthlein clearly fails to teach or suggest the switching between and the supply of power from only one of a high-voltage bus and a low-voltage bus to a high-voltage load.

In order for a reference to anticipate a claim the reference must teach or suggest each and every element of that claim, see MPEP 2131 and *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628. Therefore, since Ruthlein fails to

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teach or suggest each and every limitation of claim 1, it is novel, nonobvious, and is in a condition for allowance. Also, since claims 6-8 depend from claim 1, they too are novel, nonobvious, and are in a condition for allowance for at least the same reasons.

Claims 2-4 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ruthlein in view of Gale et al. (U.S. Pat. No. 6,304,056).

Applicant submits that since claims 2-4 depend from claim 1, they too are novel, nonobvious, and are in a condition for allowance for at least the same reasons.

With respect to claims 3 and 4, the Office Action states that Ruthlein fails to disclose the ISG control circuit signaling the ISG in response to the load signal and adjusting performance of the ISG. Applicant agrees. The Office Action, however, states that Gale provides such disclosure. Applicant traverses. In col. 3, lines 57-65, Gale states that the inverter drive is enabled by the controller 16 to allow the starter/alternator 10 to charge the capacitor 34 to a maximum voltage. The inverter drive is disabled when the capacitor 34 is at the maximum voltage. When the voltage of the capacitor 34 reaches a minimum voltage level the process is repeated and the inverter drive is again enabled. Thus, the controller 16 operates the starter/alternator 10 based on the voltage level across the capacitor 34, not based on a load signal, as claimed. Therefore, Gale, like Ruthlein, also fails to teach or suggest signaling an ISG in response to a load signal.

Referring to MPEP 706.02(j) and 2143, to establish a *prima facie* case of obviousness the prior art reference(s) must teach or suggest all the claim limitations, see *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Thus, claims 3 and 4 are further novel and nonobvious for the above-stated reasons.

Claim 5 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Ruthlein in view of Itoh et al. (U.S. Pat. No. 5,796,175), and further in view of Masberg et al. (U.S. Pat. No. 6,177, 734).

Applicant submits that since claim 5 depends from claim 1, it too is novel, nonobvious, and is in a condition for allowance for at least the same reasons.

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The Office Action states that Ruthlein fails to teach any of the limitations further recited in claim 5. Applicant agrees. The Office Action, however, states that Itoh discloses a bi-directional switch. Applicant traverses. In the August 26th Response the Applicants stated that the switch 3 of Itoh is not a bi-directional switch. Current passes through the switch 3 in only a single direction. Current from the high-voltage battery 4 is supplied to the inverter 1 and the converter 7 only when the switch is closed. Current is not supplied to the high-voltage battery 4. The Office Action states that the specification of the present application, in paragraph 34, lines 1-2, states that the high-voltage bus of the invention likewise supplies current to the high-voltage loads only when the switch is closed. Applicant submits that paragraph 34, lines 1-2, of the present application states that the converter 44 opens switch 42 so that the high-voltage loads 30 are only receiving power from the low-voltage bus 28 and not from the high-voltage bus 26. Applicant is unable to find anywhere in the present application where the recited statement is located.

Regardless, in Figure 2 one can see the bi-directional flow through the switch 42 of the present application. Also, in paragraphs 33, 35, and 36, the specification describes flow in multiple directions through the switch 42. In paragraph 33, the specification states when a high-voltage mode is to be performed the converter 44 performs an up-conversion by maintaining a closed state on switch 42 in response to a first direction signal. In paragraphs 35 and 36, the specification states that the converter 44 switches the switch 42 to a closed state in response to the second direction signal to perform a down-conversion. In performing the down-conversion, high-voltage on the high-voltage bus 26 is converted into low-voltage to be supplied to the low-voltage bus 28. Thus, a bi-directional switch, in which current may flow in one of two directions when closed, is disclosed in the specification. Itoh discloses a switch through which current only flows in one direction when closed.

The Office Action also states that Masberg discloses controlling direction of voltage conversion. Although this may or may not be true in a broad sense looking solely at the limitations recited in claim 5, when reviewing the

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limitations of amended claim 1, one can readily ascertain that the required disclosure by Masberg is not provided. The bi-directional converter claimed controls the switching between and whether a high-voltage bus or a low-voltage bus supplies power to a high-voltage load. The bi-directional converter claimed is not configured such that power is supplied simultaneously from both the high-voltage bus and the low-voltage bus to the high-voltage load. In Masberg, although a voltage converter is disclosed, the voltage converter does not control the switching between a high-voltage bus and a low-voltage bus. The voltage converter of Masberg is simply a common DC-to-DC converter that converts voltage between a low level and a higher intermediate level and visa versa. Like, Ruthlein and Itoh, there is no switching between buses disclosed in Masberg.

Thus, claim 5 is further novel and nonobvious for the above-stated reasons.

Claim 9 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Ruthlein in view of Arai et al. (U.S. Pat. No. 6,191,558).

Applicant submits that since claim 9 depends from claim 1, it too is novel, nonobvious, and is in a condition for allowance for at least the same reasons.

The Office Action states that Ruthlein fails to disclose the limitations of maintaining a predetermined minimum voltage level of approximately 30 volts on a high-voltage load. Applicant agrees. However, the Office Action states that Arai discloses the stated limitations. Although Arai discloses the maintaining of voltage on a high-voltage battery 3, Arai fails to teach or suggest, like Ruthlein, the maintaining of a predetermined minimum voltage level on a high voltage load through the switching between a high-voltage bus and a low-voltage bus. In Arai, there is no switching between the low-voltage battery 4 and the high-voltage system pattern 9 and the high-voltage battery 3. There is no up-conversion disclosed in Arai. The high-voltage system pattern 9 solely supplies power to the high-voltage battery 3 via the alternator 6. Power is not supplied from the low-voltage battery 4 to the high-voltage battery 3. Thus, a predetermined minimum voltage level of 30 volts on a high voltage load is not

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maintained through the switching between a high-voltage bus and a low-voltage bus.

Thus, claim 9 is further novel and nonobvious for the above-stated reasons.

Referring to MPEP 706.07, Applicant, respectfully, submits that this action has been improperly been made final. Applicant agrees that under present practice a second or subsequent action may be made final even when the Examiner introduces a new ground of rejection as is necessitated by Applicant's amendment. However, Applicant is also aware that present practice does not sanction hasty or ill-considered final rejections. The Applicant has merely sought to define the patent protection to which they are justly entitled. The Applicant has previously and clearly amended the claims such that the claimed invention is not taught or suggested by the prior art, and in so doing they deserve the cooperation of the Examiner and should not be prematurely cut off in the prosecution. This is supported by the now allowed claims 10-22 and the fact that the Applicant feels that claim 1 has been misinterpreted and as such is only clarified herein to be consistent to that argued in the August 26th Response. The Applicant has responded promptly and has not resorted to technical or obvious subterfuges.

Although the claims have been and are currently in allowable form in view of the relied upon art, should the Examiner deem a further search is necessary, the application should be made non-final and the issuance of an Advisory Action should be deemed inappropriate at this time.

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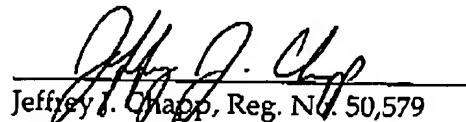
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In light of the amendments and remarks, Applicant submits that all of the objections and rejections are now overcome. The Applicant has added no new matter to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, the Examiner is respectfully requested to contact the undersigned attorney.

Respectfully submitted,

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Dated: November 21, 2005